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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,599	07/20/2006	Bernard Teneze	L7307.06116	1682
24257	7590	11/13/2009	EXAMINER	
Dickinson Wright PLLC			GREEN, RICHARD R	
James E. Ledbetter, Esq.				
International Square			ART UNIT	PAPER NUMBER
1875 Eye Street, NW., Suite 1200				3644
WASHINGTON, DC 20006				
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			11/13/2009	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/586,599	TENEZE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Richard R. Green	3644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 23 July 2009.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 16-30 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 16-30 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 20 July 2006 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____.   | 6) <input type="checkbox"/> Other: _____ .                        |

## DETAILED ACTION

### ***Response to Amendment***

The amendment to the claims submitted 7/23/2009 fails to comply with 37 CFR 1.121(c)(3), which requires that "[t]he text of all pending claims not being currently amended shall be presented in the claim listing in clean version, *i.e.*, without any markings in the presentation of text", and have a status identifier of "original," "withdrawn" or "previously presented".

The amendment of 1/16/2009 was entered and an Action was given with consideration of the limitations therein. Thus, if there are no changes to the claims between the amendment of 1/16/2009 and the claims presented on 7/23/2009, then all pending claims should be labeled "previously presented", and no markup should be present. For further guidance regarding the submission of amendments to the claims, see 37 CFR 1.121(c), all subsections.

However, because the attempt appears to be *bona fide*, and because Applicant states in the Remarks of 7/23/2009 that "[t]he amendments to claim 16 are re-presented in accordance with the revisions made in the Amendment dated January 16, 2009" (Remarks page 6, ¶ 2), the requirements of 37 CFR 1.121(c) have been waived, and claim 16 is considered to be "previously presented". In the next presentation of the claims, please mark the text of the claims to show any differences relative to the claims submitted 7/23/2009.

***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the

**Guidance unit of claim 24** (fig. 3 shows a third propulsion unit at 11, but no guidance unit not already claimed);

must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Objections***

Claim **16** objected to because of the following informalities:

In lines 5-6, it would be clearer if instead of "forces whose lines of action pass through the center of gravity of said flying object", the limitation read, "forces acting along lines which pass through the center of gravity of said flying object".

In line 13, "latter" is unnecessary since only two motors have been introduced.

Claim **28** is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. **Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.**

Parent claim **24** claims a "propulsion unit" and a "guidance unit", and base claim **16** claims a "lift and displacement motor" and an "attitude motor". In parent claim 24 the units are set forth as apparently separate and distinct from the motors of claim 16. To state in claim 28 that the propulsion unit is the lift/displacement motor and that the guidance unit is the attitude motor broadens the scope of the dependent claim from the scope of the parent.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims **16-30** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim **16**, the preamble sets forth a "flying object", and line 2 sets forth "an elongate body", and the terms are thereafter used interchangeably; in lines 6, 12, 16, 20-22, 24 and 25 limitations refer to the flying object, and yet in line 24 the position of the picture taking unit is recited with respect to the elongate body. It is unclear what distinction is present or meant between the two, though it seems that no distinction is meant, in which case references to the same structure should be consistent. Perhaps in line 24 "said elongate body" could be replaced with "said flying object".

In line 3 and in line 9, the phrase "of the type" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

In lines 13-14, the position of the center of gravity of the flying object is described to remain at least approximately fixed "during the combustion of the respective propelling charges of these latter two motors". It is unclear whether this means that the rates of combustion are such that the position of the center of gravity within the flying object does not change, or whether it means that the motion of the flying object is restricted to rotation about the center of gravity, the object substantially not moving with respect to an external reference frame (the geodetic, for example). From the passage in the Specification, it is believed that the former is correct; the flying object may still move while both engines are operating, but the position of the center of gravity along

the longitudinal axis of the flying object does not change. The claim language is however unclear.

It is not clear what is meant in lines 19-21 that the lift/displacement motor is able to ensure "the lift and the displacements of said flying object in an observation position..."; the language is awkward. Does this mean that this motor is able to place and keep the flying object in an observation position, such as by maintaining a particular distance from the ground? What is different between this and the limitation in lines 22-23 where the attitude motor is able to maintain the flying object in the vertical observation position? The language does not clearly set forth what capacities the respective motors are intended to have.

Regarding claim **24**, in line 2, does "comprises" mean, "further comprises", such that the "propulsion unit" is a new and distinct unit from the two motors? If not, then this claim is not in proper dependent form.

Lines 2-4 literally state that the flying object is allowed to attack a target, that the attacking is accomplished via the rear part of the body, and that the target is detected for the picture taking unit. Is the target not instead detected by the picture taking unit? What does it mean to attack the target via the rear part of the body? Does this mean, that the picture taking unit detects a target which the flying object then attacks, rear-side first? Or rather, that the provision of the warhead charge, propulsion unit and guidance unit allow the flying object to perform such a maneuver?

From the treatment in dependent claims, it seems intentional that the terms "propulsion unit" and "guidance unit" cannot be clearly linked to particular structures in

the disclosure. If the "guidance unit" must be the axial nozzle 13 to support the limitations of claim 26, but must be the "attitude motor" to support the limitations of claim 28, which structures are not structural equivalents, nor species of the same genus, then the terms do not particularly point out nor distinctly claim the structures which Applicant considers to be the invention.

Regarding claim **25**, what does it mean for the propulsion and guidance units to be independent of the two motors in the direction of the target? Independent in what way? Are they structurally independent, do they have independent fuel supplies, are they operated out of unison, or do they exert forces in mutually exclusive planes? The claim language is indefinite. Also, are they not independent in directions other than that of the target?

Regarding claim **26**, what does it mean for the propulsion and guidance units to "consist of an additional motor" in the direction of the target? How is the recitation of a direction meaningful to the consist clause? Further, how can two structures consist of a single structure? Was the term "consist" intended in light of its meaning in accordance with US practice, or do the propulsion and guidance units instead form an additional motor, which motor comprises the propulsion and guidance units?

What is the motor "additional" to? Is it a third motor, additional to the lift and attitude motors? It is unclear whether or not parent claim 24 claimed a propulsion unit separate from these elements.

Regarding claim **28**, where are the first and second nozzles? It is also unclear how the recitation of a direction is meant to govern interpretation of the formed clause; are the propulsion and guidance units formed by other things in another direction?

Are the third and fourth nozzles distributed laterally around the attitude motor? Or are these sets of nozzles, one of which is distributed around the attitude motor?

Further, in claim 24 the structures, "propulsion unit" and "guidance unit" were introduced as separate from all previously recited structures. In claim 28 are they now indistinct from the lift/displacement motor and the attitude motor? How does claim 28 further limit the invention of claim 24?

Regarding claim **29**, there is insufficient antecedent basis for "said first and second nozzles". Further, it is indefinite to describe separate structures of first and second nozzles, and then state that the terms refer to the identical structure of two other terms, "said third and fourth nozzles". It would be clearer if two nozzles were claimed, which each had first and second positions.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims **16-30** as best understood are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN-5,620,152 to Sargent in view of USPN-5,181,673 to Hubricht et al.

Regarding claims **16, 18-22, 24-26**, Sargent teaches a missile (1) comprising:

A lift motor (5) located slightly forward of the center of the missile (col. 2, lines 20-22) and providing exhaust to nozzles (6) (col. 2, lines 4-9), which produces a thrust acting on lines passing through the center of gravity of the missile (fig. 1, 2: the nozzles 6 are aligned with axes passing through the center of ball 7, which center is just aft of motor 5; since the motor 5 is "just forward" of the center of the missile, the thrust from nozzles 6 acts on lines at least substantially passing through the center of gravity), wherein the lift motor is capable of allowing the missile to hover in a vertical position with its rear end directed downwards (col. 1, lines 18-20);

An attitude motor (7) producing lateral maneuvering forces (col. 1, lines 31-43) disposed on the other side of the center of gravity from the lift motor (the lift motor is forward from the gimbal 7, which is considered a motor in concert with the system of cables 9 which combine to govern lateral acceleration of the missile, and the center of mass of the gimbal 7 and cables 9 is aft of the center of mass of the missile as a whole), wherein the attitude motor is able to keep the missile oriented vertically (it is able to keep the missile in a vertical orientation, among many others by nature of its design);

Wherein the missile is controlled in roll by the lift motor (5) (col. 1, lines 36-43);

Wherein the missile is launched by a launch/control post (13) comprising an ejection system (16) not carried by the missile (fig. 3);

A linking unit (10) to link with the launch/control post (13), the linking unit comprising at least one optical fiber (the tether is optically visible);

A warhead (3) and a guidance unit (20) allowing the missile to attack a target (col. 3, line 44 – col. 4, line 4), said guidance unit being independent of the lift motor;

Sargent fails to teach a camera mounted on the missile.

Hubricht teaches in fig. 1 and 2 a tethered missile having an optical fiber link to the launch platform, and a camera mounted on the missile for detecting targets (col. 2, lines 3-21). It would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the camera of Hubricht in the missile of Sargent for the purpose of reacting to targets that a base system camera is unable to pick up (Hubricht col. 3, lines 52-56). It would further have been obvious to incorporate the light waveguide optical link for the purpose of transmitting data from the camera to the base station. This camera would be disposed at an end of the missile, and having a field of view shown in Hubricht fig. 1 would be able to observe the ground when the missile is approximately but not exactly vertical.

Regarding claim 17, the lift motor 5 appears to have a greater mass than the combined system of gimbal 7 and cables 9, and when the missile is deployed to the end of its tether the center of mass of the lift motor is closer to the center of gravity of the missile than the center of mass of the gimbal-cables system, however Sargent is silent to the relative masses of the motor 5, gimbal 7 and cables 9. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Sargent to have a greater mass than the cables and gimbal as a matter of routine

optimization to reduce fuel use, since the motor is the only element able to directly produce lifting thrust, and the weights of the other elements are desirably minimized to attain optimal flight time for the least expense of fuel.

Regarding claim **23**, Hubricht is silent on a second camera, however it would have been obvious to a person of ordinary skill in the art at the time of the invention to provide a duplicate redundant camera in case of failure of the first, and at a different longitudinal location to avoid an accident taking out both at once. One of these cameras would then be located at a rear part with respect to the first.

Regarding claim **27**, Sargent is silent on the provision of a jettisonable radome, however the examiner takes Official Notice that it is known in the art to provide missiles with radomes to protect or present an aerodynamic surface for electronic equipment on a missile, and further to make radomes droppable or jettisonable so that their presence does not interfere with the operation of the electronic equipment. It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide the missile of Sargent in view of Hubricht with a droppable radome to cover the camera and provide an aerodynamic surface for the climbing stage of missile flight while not blocking the vision of the camera when the missile reaches service altitude.

Regarding claims **28-30**, Sargent provides a lift motor and an attitude motor as previously described; both motors are associated with nozzles 6, of which there are at least two, and which are orientable via gimbal 7, but in fixed relationship to one another.

### ***Response to Arguments***

Applicant's arguments, see page 6, ¶ 3, filed 7/23/2009, with respect to the drawing objection for combustion gas supply have been fully considered and are persuasive. The objection of 7/23/2009 has been withdrawn.

Regarding applications arguments in page 7, ¶ 2, it is believed that several issues remain regarding the propulsion and guidance unit, as noted above under the heading for 35 USC 112. Claim 24 should state that the flying object "further comprises" the recited claim elements, to remove any ambiguity of whether or not the recited elements are separate or additional to the motors of claim 1. Rather than clarifying, claim 28 creates an inherent contradiction to parent claim 24 by describing the propulsion and guidance units to be formed by previously introduced claim elements. When claims 25 and 26 appear to suggest that the propulsion unit of claim 24 is a third motor, and claim 28 states that it is not, it becomes difficult to interpret the limitations of claim 24. If it is desired to claim in separate chains of dependency the embodiments of figures 1-4, this should be done in a manner where all claim limitations are clearly defined.

Regarding the first through fourth nozzles (Remarks page 7, ¶ 4), at present insufficient or unclear antecedent basis exists for all nozzles, however it is stressed that whenever elements are introduced in a parent claim, it is improper to later describe those elements to instead be a different orientation of other claim elements, since it becomes unclear how many elements are required by the claims.

Applicant's arguments with respect to claims **16-30** have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPN-3,806,064 to Parilla teaches a rocket capable of hovering flight.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard R. Green whose telephone number is (571)270-5380. The examiner can normally be reached on Monday - Thursday 8:00 am - 6:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Mansen can be reached on (571)272-6608. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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